DOCUMENT RESUME

ED 168 569 IR 007 110

AUTHOR Cramer, Robert F.
TITLE A Plan and Manual for the First Stage (Fully Operational) of a Computerized Community Skills Exchange.
INSTITUTION Resources for Communication, Windsor, Calif.
PUB DATE 78
NOTE 21p.; Not available in hard copy due to marginal legibility

EDRS PRICE MF01 Plus Postage. PC Not Available from EDRS.
DESCRIPTORS *Community Information Services; Community Resources; Data Collection; *Data Processing; *Human Resources; *Information Systems; *Job Skills; Manuals; Program Planning; Questionnaires

ABSTRACT

The techniques for data collection and storage using files and punch cards which are described are used by the computerized community skills exchange, A Person To Person Living Exchange (APPLE), in Portland, Oregon. Clients complete questionnaires that register up to seven skill-areas in which they seek help, or where they could provide service to others. To effectively match skills and needs from this data, an item file and an inverted file are manually constructed. The item file is organized by client name and gives address, skills, needs, and other necessary information. An inverted file uses keywords to describe each skill and additional keywords to indicate levels of competence, kinds of compensation needed, and other details. Persons possessing these skills are listed below the keyword as numbers. Overlaps in skills and needs can be detected through this file. A description of the APPLE system, together with the skills and resources list and the membership questionnaire, provides background information to the step-by-step instructions on data preparation. Explanations are given for the construction of item and inverted files and the use of the numbering system and keywords with punch cards. Manual manipulation of punch cards for matching needs and skills prior to programming of the computer using these cards is also described. (CWM)

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A PLAN AND MANUAL

FOR THE FIRST STAGE (FULLY OPERATIONAL)

OF A COMPUTERIZED

COMMUNITY SKILLS EXCHANGE

Developed by Robert F. Cramer
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RESOURCES FOR COMMUNICATION
341 Mark West Station Road
Windsor, California 95492
707 542-7819

Using categories in use by
APPLE / RAIN, Portland, Oregon

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Robert F. Cramer

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC) AND USERS OF THE ERIC SYSTEM."

IR007110

TO THE READER:

Two different kinds of strong reaction to this Plan and Manual keep showing up. If one is like yours, this note is for you.

First, "computing people" are surprised because a manual system can be designed to be so very much like an electronic system. Its "logic" is recognizable and familiar, and they know this kind of logic demands many punch-cards. Most of them hadn't known about this kind of "inverted-logic" card, which makes a cheap way to start up a system and get the "bugs" out. They like that.

Second, the more common reaction comes from non-computing people. The mass of details makes them wince. If the wince is really more like a shudder, they delay adopting the plan, having missed the critical point that all computing is full of details, especially those parts called "data-preparation", which takes place outside the machine, manually, daily, endlessly.

Waiting for an effortless computer, however, is itself costly in terms of lost opportunities or slow service.

So we'd like you to know you can also use this type of punch-card for a simpler, three-stage manual system-to-electronic system.

To save time and money initally, use just one card for each skill you decide to record.

Then, make a few more cards for special considerations. One might be, "This person available any time of day or week." Another, "this person has his/her own transportation." You can make quite a few of this type of card without creating a huge deck.

These special-consideration cards can be superimposed over one or more of the skills cards. They can be superimposed more than one at a time, too. For instance, if an inquirer needs day care / during the week / from someone with his or her own transportation /, you'd pull out the three appropriate cards from the entire deck. Then you'd put them on top of each other to read out any index number that might show light through all three cards.

So you can start even more simply than the Plan and Manual suggests:

1) use just one card for each skill, plus one card for each special consideration (and maybe a few cards to show geographic subdivisions of the area you're serving would be useful, but optional);

2) then, later, when you feel comfortable with cards, add enough to operate the way the Plan and Manual requires;

3) and then, when you're comfortable with that and have made any changes you want to make, you have your "bug-free" complete design to hand to a programmer.

The card method is very flexible, in other words. And there are many more ways to use them. For more ideas, feel free to write to the author at the address in the manual. This will not incur expense to you unless he first warns you in writing.

INTRODUCTION

APPLE is a community skills exchange in Portland, Oregon. (APPLE stands for "A Person to Person Living Exchange".)

People are invited to fill out a simple questionnaire. This registers up to seven skill-areas in which they seek help, or where they could provide service to others.

Data from the questionnaires is entered into a computer. People then can be put in touch with each other.

Many communities have skills exchanges, but most rely on printed skills catalogs that are occasionally updated. And some communities are "waiting for the computer to come" before starting to design an exchange service.

If you are interested in an APPLE type of center, but cannot afford a computer yet, this paper will show you how to use a certain type of punch-cards as an efficient substitute.

We'll show you how APPLE gathers information -- but instead of showing you how to enter data directly into a machine, we'll show you how to prepare data records that you can use without a machine. When you do go onto a computer, these same cards tell your programmer what to do.

All you need for this first stage are cards and punches whose total cost should run between $20 and $250, depending on how many people you plan to include in your exchange service. A computer to achieve the same results will run between $2,500 and $12,000 or more.

SOME THINGS ABOUT COMPUTING
THAT SOMETIMES CONFUSE PEOPLE

1. The data that APPLE is collecting look pretty simple -- in spite of a stripped-down, no-nonsense questionnaire. It is not simple. There are nearly 200 skills. For each, there are seven possible types of interest. Then there are **five** levels of competence, and three different choices for compensation. To mix and match all these is inefficient or impossible by ordinary methods.

So, the first thing we want to clarify about computing is that, often, it is a necessity and not just an option or a luxury. In an Appendix, we discuss this more fully.

2. Computing, to be effective in matching skills and needs, requires <u>two complete files</u>: an "item" file, and an "inverted" file.

An item file is organized client by client: his name, address, skills, needs, etc. In order to retrieve anything from it, you have to know the name of the client. If you filed your filled-in questionnaires in alphabetical order by name, you would have a typical item file.

An inverted file uses "keywords" to describe each skill. Other keywords describe levels of competence, kinds of compensation needed, and other details such as area where the person is located. Where the item file starts with a person's name and then lists characteristics he possesses, the inverted file starts with a characteristic or keyword, and lists all the persons possessing it. Usually the person appears as a number.

In a computer's double file, keywords are consulted first. A keyword might be "housepainters". The question would be, "Do we know any housepainters?" The answer might be, "Yes, 36 of them."

Then we might ask, "Do we know anyone who is willing to lend tools?" The answer might be, "Yes, 14 people."

Then, still in the inverted or keyword files, we would instruct the computer to see if any of the persons willing to lend tools are housepainters (and therefore would be lending housepainting tools). If there is an "overlap", that is, some housepainters who lend tools, the computer will say, "Yes, there are 2" and then we will be led to the item file. We are sure to ask, "Tell me more about those two persons" and that information will come from the item file.

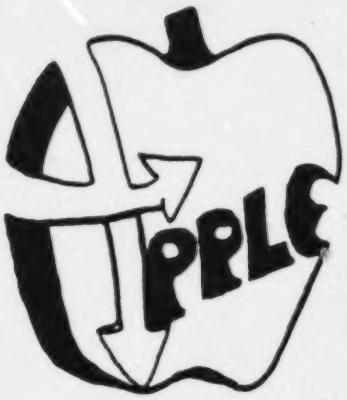
We think it is important for anyone planning a skills exchange to realize that computing demands more "indexing" than you might think. We have never heard of any short-cuts for this. Efficiency in matching skills and needs is achieved **not** only by miracle machines but by additional indexing of data.

3. This indexing is done manually. Someone has to manually transform the completed questionnaires into inverted files.

If this inverted indexing process is done on punch cards, those cards can be used (Stage One) without any machinery at all if you are starting with fewer than 10,000 persons. When you get your computer (Stage Two), all your programmer has to do is look at your cards, translate the keywords and the patterns of holes into a "machine language", and type them directly into the computer. He does <u>not</u> have to reorganize your data, or add to it. You have already done your work in computer style.

Going down for the third time.

The next several pages
show you the forms
APPLE uses to collect data.



History

Thirty-one national women's groups formed the National Self-Help Resource Center. In conjunction with the American Revolution Bicentennial Administration, they made an effort to increase citizen participation in local decision-making. The program, **Community Resource Centers**, called for the development of ten pilot projects nationwide. APPLE (A Person to Person Living Exchange) is the result of a request under this program by the North and Northwest neighborhoods of Portland. A grant was given to develop a neighborhood information and skills exchange for each neighborhood. The APPLE project is NWDA's method of establishing its center.

Goals of APPLE

1. Increase neighborhood sharing and sense of community through connecting "informal neighborhood grapevines" and making them accessible.
2. Build awareness in residents of skills and goods they have to share.
3. Begin a respectful, reciprocal way to exchange goods, skills and services for residents who wish to share, trade or barter.
4. Develop a process for making information about neighborhood resources available to people.

APPLE Planning Committee

The following individuals have been involved over the last year in planning and implementing the NWDA APPLE project:

Raymond Albano
Sue Halupowski
Evelyn Hamilton
Jane Hodges
Steve Johnson
Shirley Mason
Jeanne Pace
Mary Pederson
Curt Snow
Evan Solley
Margaret Strachan

We would also like to express our appreciation to all the individuals and organizations who have helped make APPLE possible.

Joining APPLE

Fill out the membership form. Pay a membership fee of $2.00 for the first year, and sign up for 2 hours of work (or any other combination of hours and money adding up to 4 digits). APPLE will protect the privacy of its members, and will not give out the names, addresses, or phone numbers.

Using the APPLE system

You start the exchange by filling out a need form (sample enclosed); mail it to, or drop it off at, 817 NW 23rd, Portland 97210. An APPLE volunteer will try to make a match and report back to you within one week. Once the match is made, the two members will work out their own terms: trading skills or goods, bartering, or in some cases, charging a fee.

APPLE volunteers at work

Though each member is requested to put in two hours of work per year, in some cases one member may reimburse another member for work done by offering to fill the volunteer's hours at the skill exchange. The volunteer work will include: updating membership information, refiling membership cards, making matches between needs and skills, recruiting new members, and follow-up on matches.

APPLE: statement of responsibilities

Participants in APPLE will –

- search ourselves honestly about what goods and services we are willing and able to share with others, being clear about our level of skills and how often we are willing to offer them to others.
- seek to balance our giving and receiving, realizing that others have a need to offer as well as receive.
- maintain the right to say no, realizing that only giving freely furthers a cooperative neighborhood spirit.

By pooling our resources and helping each other, APPLE members can encourage and facilitate a sense of neighborhood sharing. Through open and unselfish cooperation with others who are willing to make a similar commitment, we generate positive energy for the benefit of all the people and build awareness of the skills and goods we have to share.

APPLE SKILLS & RESOURCES LIST

These keywords are provided for your convenience in registering your interests and resources with APPLE. Keep this list as a reminder of the services you may obtain as an APPLE member.

Agriculture & Gardening

Composting
Farming (tree, worm)
Gardening
Greenhouses
Insects or diseases
Irrigation/water systems
Landscaping
Mushrooms
Plowing, rototilling
Soil analysis
Veterinary
Other

Arts, Crafts, Entertainment

Acrobatics, gymnastics
Animation, cartoons
Beadcraft
Bookbinding
Calligraphy
Candle making
Ceramics
Dance
Furniture making/woodworking
Graphic arts
Jewelry
Leathercraft
Magic
Metalsmithing
Music
Origami/ikebana
Painting
Photography
Poetry
Printing
Quilting
Rug making
Sculpture
Sewing
Singing
Stained glass
Theater
Tie dyeing, batik
Toys & games
Weaving & spinning
Writing
Yarn & string
Other

Business, Finance, Real Estate

Accounting
Advertising
Business research
Career counseling
Collective bargaining
Cooperative, non-profit business
Consumer affairs
Credit unions
Developers
Financing, banking
Fund raising
Investments
Legal, tax service
Marketing
Notary public
Office workers
Organizing
Other

Construction & Home Repair

Alternative systems
Architecture & design
Carpentry
Carpets
Cement work
Drafting
Drywalling
Electrical systems
Engineering
Extermination
Fencing
Fireplaces, stoves
Flooring & tiles
Foundation laying
Heavy equipment
Handyman, day labor
Insulation
Machining
Masonry & plastering
Mobile homes
Paint and wallpaper
Plumbing
Remodeling
Road building
Roofing/guttering
Sawmilling
Surveying
Sauna/hot tubs
Welding
Window making
Wrecking
Other

Domestic Skills & Personal Service

Babysitting/daycare
Baking
Beer, wine making
Co-op bus, ride pools
Cleaning (home/business)
Cobbler
Cooking
Food preservation
Gardener/caretaker
Hair care
House/pet/plant sitting
Interior decorating
Moving, hauling, towing
Restaurant/bars
Tailor, alterations
Washing/ironing
Wake up, reminder service
Other

Fix It & Servicing, Repairs

Airplanes
Appliances, large
Appliances, small
Auto repair, interior
Auto repair, exterior
Auto repair, foreign
Bicycle repair
Boats
Diesel engines
Electric motors/small engines
Farm machinery
Furniture repair
Motorcycles
Stereo, TV, radio
Tools
Trucks
Other

Sciences/Education/Communications

Alternative education
Biological sciences
Cartography
Communications (radio, TV)
Computer science
Conservation/preservation
Ecology
Languages
Natural sciences
Physical sciences
Recycling
Sign language/braille
Social sciences
Tutoring
Other

Spiritual Awareness

Astrology
Bio-feedback
I Ching
Meditation
Occult
Organized religious groups
Palmistry
Sufis
Tai Chi
Tarot/cards
Yoga
Other

Health

Acupuncture
Biorhythm charts
Birth control
Centering
Chiropractic
Convalescent/elderly care
Counseling
Dentistry
Diets & fasting
First aid
Herbology
Massage
Midwifery
Naturopathy
Nutrition
Pharmaceuticals
Professionals
Other

Sports, Games Hobbies

Animals
Aviation
Bicycling
Bowling
Card/dice games
Chess
Collecting
Fishing/hunting
Fencing/archery
Hiking, mountaineering
Martial arts
Racing
Simulation/gaming
Sky diving
Snow/ice sports
Team sports
Tennis/golf
Track
Water sports
Other

APPLE Membership Application

Name _____ Day Phone _____

Address _____ Zip _____ Evening Phone _____

This information **CONFIDENTIAL** – Will not be disclosed without your permission.

Print or type your name and address, along with your day and evening phone numbers, in the spaces provided. Please note any time limitations on using these phone numbers.

In the first column, list up to seven keywords, from the attached list, which you would like to register with APPLE.

Then circle the code letter(s) which describe(s) the type of contact you wish to have for each keyword you listed in the first column. These codes are:

- **C – contact others with this same interest**
- **E – have recent consumer experience to share**
- **G – goods or merchandise for trade**
- **H – have tools to lend**
- **L – learn**
- **T – teach**
- **W – willing to provide this work or service**

For each applicable keyword, circle the number corresponding to your current skill level, where 1 means beginner and 5 means crackerjack.

Indicate whether you are interested in

- **B – Bartering**
- **F – Working for a fee**
- **V – Volunteering**

by circling the corresponding letter, for each keyword.

Lastly, list any additional information about your skill or interest that would help APPLE to make the kinds of matches you desire. Use the comments section. Please indicate any limits on the number of times you wish to be contacted: i.e. every other week, once a month, etc.

Read and sign the liability clause, and return your completed application to APPLE.

SKILL OR INTEREST from the attached list	EXCHANGE CODE	CURRENT SKILL LEVEL	BARTER FEE VOLUNTEER	COMMENTS
_____	C E G H L T W	1 2 3 4 5	B F V	_____
_____	C E G H L T W	1 2 3 4 5	B F V	_____
_____	C E G H L T W	1 2 3 4 5	B F V	_____
_____	C E G H L T W	1 2 3 4 5	B F V	_____
_____	C E G H L T W	1 2 3 4 5	B F V	_____
_____	C E G H L T W	1 2 3 4 5	B F V	_____
_____	C E G H L T W	1 2 3 4 5	B F V	_____
_____	C E G H L T W	1 2 3 4 5	B F V	_____
_____	C E G H L T W	1 2 3 4 5	B F V	_____
_____	C E G H L T W	1 2 3 4 5	B F V	_____

Liability Clause

I agree that in no way will I hold APPLE or its members responsible for inferior workmanship; nor will I prosecute or sue either party for workmanship, knowing that it is my responsibility to supervise labor. Furthermore, I release APPLE and all of its members from any liability whatsoever, whether personal injury, theft, legal, financial, or otherwise, occurring before, during, or after APPLE transactions.

Signed _____ **Date** _____

APPLE Membership Application

Name JAN SMITH Day Phone 282-4567 (answering service)

Address 2345 NW PETTYGROVE Zip 97210 Evening Phone 223-1234

This information **CONFIDENTIAL** – Will not be disclosed without your permission.

Print or type your name and address, along with your day and evening phone numbers, in the spaces provided. Please note any time limitations on using these phone numbers.

In the first column, list up to seven keywords, from the attached list, which you would like to register with APPLE.

Then circle the code letter(s) which describe(s) the type of contact you wish to have for each keyword you listed in the first column. These codes are:

- C – contact others with this same interest
- E – have recent consumer experience to share
- G – goods or merchandise for trade
- H – have tools to lend
- L – learn
- T – teach
- W – willing to provide this work or service

For each applicable keyword, circle the number corresponding to your current skill level, where 1 means beginner and 5 means jackerjack.

Indicate whether you are interested in
- B – bartering
- F – working for a fee
- V – volunteering

by circling the corresponding letter for each keyword.

Lastly, list any additional information about your skill or interest that would help APPLE to make the kinds of matches you desire. Use the comments section. Please indicate any limits on the number of times you wish to be contacted: i.e. every other week, once a month, etc.

Read and sign the liability clause, and return your completed application to APPLE.

SAMPLE

SKILL OR INTEREST from the attached list	EXCHANGE CODE	CURRENT SKILL LEVEL	BARTER FEE VOLUNTEER	COMMENTS
CALLIGRAPHY	X E G X L X W	1 2 3 (4) 5	(B) F V	
NOTARY PUBLIC	C E H L X W	1 2 3 (4) 5	B (F) (V)	
TEAM SPORTS	X E H L T W	1 2 X 4 5	B F V	SOCCER, VOLLEYBALL
MASSAGE	C E G X T W	X 2 3 4 5	X X V	ACU-PRESSURE MASSAGE
LANGUAGES	C E G H L X W	1 2 3 X 5	X X X	LIVED TWO YEARS GREECE
	C E G H L T W	1 2 3 4 5	B F V	
	C E G H L T W	1 2 3 4 5	B F V	
	C E G H L T W	1 2 3 4 5	B F V	
	C E G H L T W	1 2 3 4 5	B F V	
	C E G H L T W	1 2 3 4 5	B F V	

Liability Clause

I agree that in no way will I hold APPLE or its members responsible for inferior workmanship; nor will I prosecute or sue either party for workmanship, knowing that it is my responsibility to supervise labor. Furthermore, I release APPLE and all of its members from any liability whatsoever, whether personal injury, theft, legal, financial, or otherwise, occurring before, during, or after APPLE transactions.

Signed Jan Smith Date 6 MAY 77

APPLE SKILLS NEEDED

SKILL: _____

Skill Level Needed: 1 – 2 – 3 – 4 – 5 Date Needed By: _____

Type of Exchange: ☐ Barter ☐ Fee ($_____) ☐ Volunteer

Work Can Be Done: Day_____ Evening_____ Weekend_____ Other_____

Please add any additional comments needed to explain your request

Name: _____

Address: _____

Day Phone (or message) _____ Evening Phone _____

Are you a member of APPLE? ☐ Yes ☐ No

If not, how did you hear about APPLE? _____

Now ...

Thus far, we've considered the why's (and why nots) and wherefores of computing. We've shown you the form by which one excellent skills exchange, APPLE, collects its data.

Now we depart from APPLE, except for using their formula: for each skill, there are indicators for NEED or WILLINGNESS TO SHARE, as well as 2 levels of competence and 3 kinds of acceptable compensation. In other words, for the manual Stage 1 we will "collapse" some of APPLE's categories in order to use fewer cards.

SECTION I: DATA PREPARATION

A. ITEM FILE

This file couldn't be simpler — you just keep all completed questionnaires in strict NUMERICAL ORDER. The first one you work on is #0, the next is #1, then #2, etc. If you need an alphabetical index, use an address book: SMITH, JOHN —— 239
SMITH, MARJORIE — 58.

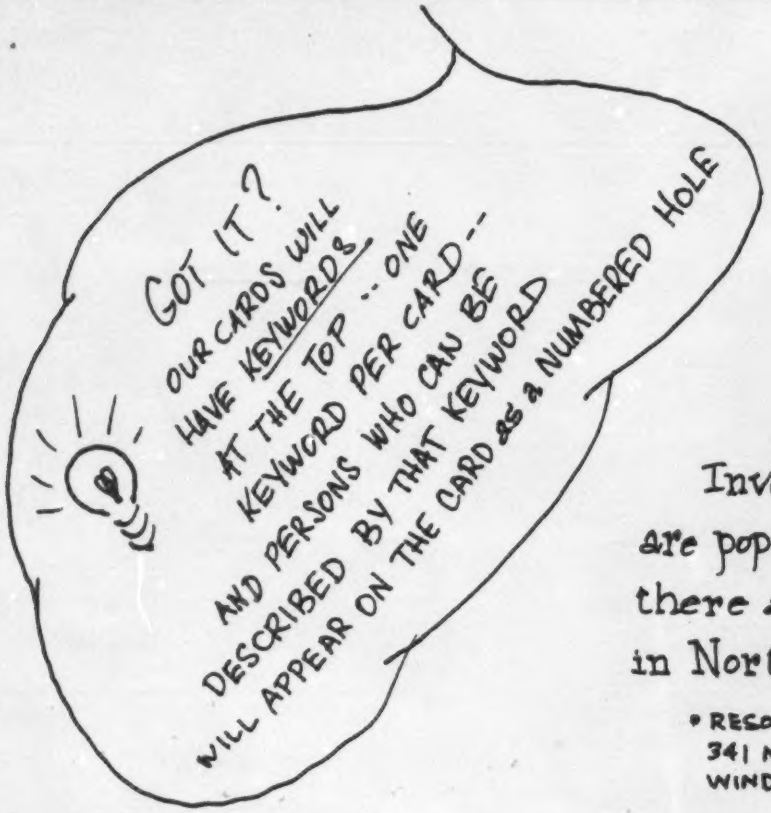
You put your questionnaires into numerical order because your INVERTED FILE gives you a number. That number is the place in your ITEM FILE where all the information about JOHN SMITH is filed--his questionnaire.

...now... ...take a deep breath!

B. INVERTED FILE:

READ THIS CAREFULLY. "INVERTED" OF COURSE MEANS UPSIDE-DOWN. IT MEANS YOUR CARDS ARE USED IN THE OPPOSITE WAY FROM YOUR USUAL NOTE-TAKING or RECORD-KEEPING.

For a review of how your computer will use an INVERTED index such as we are about to prepare on cards, look again at the very bottom of our first typed page, and the top of the second typed page.


GOT IT?
OUR CARDS WILL HAVE KEYWORDS AT THE TOP -- ONE KEYWORD PER CARD -- AND PERSONS WHO CAN BE DESCRIBED BY THAT KEYWORD WILL APPEAR ON THE CARD as a NUMBERED HOLE

1. WHAT CARDS TO USE?

Inverted style cards are popular in Europe -- but there are only 2 sources in North America:

- RESOURCES FOR COMMUNICATION
  341 MARK WEST STATION ROAD
  WINDSOR, CALIFORNIA 95492
  707 - 542 - 7819

- TERMATREX PRODUCTS, INC.
  26 NORTH SUMMIT AVENUE
  GAITHERSBURG, MARYLAND 20760
  301 - 840 - 1790

FOR UP TO 360 PERSONS, USE R·F·C· CARDS #03C-3C.
THESE COST $4.50 PER 100. PUNCH IS $4.50.
FOR UP TO 2,500 PERSONS, USE R·F·C· CARDS #03C-25C.
THESE COST $24.00 PER 100. PUNCH IS $8.00.
FOR UP TO 10,000 PERSONS, USE R·F·C· CARDS #03C-10M.
THESE COST $24.00 PER 100. PUNCH IS $8.00.
OR FOR UP TO 10,000 PERSONS, USE TERMATREX 10,000.
THESE COST $62.00 PER 100. DRILL (NO PUNCH) IS $6,000.00.

Generally, the lower-capacity cards are easiest to use. But be certain the card you choose has sufficient capacity -- a numbered space for EACH PERSON you will serve 'til you get your computer. If uncertain, then use the 2,500.

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2. BECOME FAMILIAR WITH THE NUMBERING SYSTEM AND PUNCH.

03C-3C has large dots individually numbered. Punch is the pliers type.

03C-25C has 25 large squares. Each contains 100 small squares and numbers along the top and one side of each large square. Punch is a 2mm steel tube which you push down.

03C-10M has 100 rows and 100 columns which intersect to form a number. Punch is a 1mm steel tube which you push down.

TERMATREX-10,000 is a "blind" card (not printed). It is automatically drilled with a push-button control, and is read by using a clear plastic ruler.

3. PUT HEADINGS ON YOUR CARDS, & HOW MANY ?

When you looked at the APPLE data form, you noted 10 broad skill areas. If your exchange service is to be this comprehensive you will need 1,600 cards. (By omitting compensation keywords you can get along with only 1,000 cards.) You need either 5 cards for each skill, or 8 for each skill.

EXAMPLES: NEXT PAGE →

EXAMPLE:

SKILL #4: TREE and/or WORM FARMING ←

-write/type this at top of one card.

For this skill - and every skill - prepare 7 more cards as follows:

- WANTS HELP / WANTS TO LEARN / NEEDS TOOLS (SKILL # 4)
- CAN HELP / CAN TEACH / CAN SHARE TOOLS / HAS INFO (4)
- SKILL LEVEL: 1, 2, or 3 ("NONE" TO "SOME") (4)
- SKILL LEVEL: 4, 5 ("COMPETENT" TO "EXCELLENT") (4)

OPTIONAL {
- COMPENSATION NEEDED OR AVAILABLE: NONE (4)
- COMPENSATION NEEDED OR AVAILABLE: BARTER (4)
- COMPENSATION NEEDED OR AVAILABLE: MONEY FEE (4)

ANOTHER EXAMPLE:

SKILL - CHILD BIRTHING

-this goes at the top of one card. Then make 7 more (or 4) exactly like those above. You need this little "deck" of cards for each skill.

4. PUNCH HOLES.

We've said a NUMBER on a card stands for a person. A number isn't a number until it's punched. Then, for example, the number 50 punched on the card, "SKILL - TREE and/or WORM FARMING" means person #50 has OR wants that skill.

So, if person #50 is punched on a skill card, some other cards in that deck will have to be punched, too. For instance, "CAN HELP/CAN TEACH/CAN SHARE TOOLS/HAS INFO", if any one of these is true. The same goes for one only of the skill-LEVEL cards, and for any or all of the COMPENSATION cards.

STAND ALL OF YOUR PUNCHED DECKS UP IN SOME KIND OF TRAY - and there you have your INVERTED FILE. Add, subtract, or update as necessary.

SECTION TWO: MATCHING NEEDS AND SKILLS

NOW the fun begins! Suppose you get a request for help with WORM FARMING. The requester wants to learn from an expert only, and for barter.

From the deck dealing with TREE AND WORM FARMING—, take the card with that title, plus "CAN HELP ETC", plus "SKILL LEVEL: 4,5", plus "COMPENSATION: BARTER". STACK THESE 4 CARDS exactly on top of each other and face a strong light-source such as a window. IF ANY HOLES SHOW CLEAR THROUGH ALL CARDS, look these numbers up in your ITEM FILE (questionnaires). If the help you seek is in your files at all, it will be one of those numbers.

Suppose the questioner wants to locate others with a similar need. Take the skill card plus the "NEED" card, superimpose them, and read off any numbers. As simple as that!

You can find out who has housepainting skills and can teach birthing – if anyone – by simply superimposing those two cards. The same for multiple combinations: fascinating because it's so quick and easy.

Your computer, when you get it, will do this without your having to handle cards or questionnaire files – but very little faster, if any faster at all.

So it's worth the indexing effort — and the bigger your files, the better this method works. There's no mystique, anyone can do it,

and it's cheap,

SO WHAT ARE YOU WAITING FOR ??

AN APPENDIX

concerning itself
with "SIMPLE DATA"
and "COMPLEX DATA"

Sometimes, when you collect data, you only intend to discover how many people fit into certain categories - for instance, how many people raise chickens. You total these things, issue a report, throw away the questionnaires — and that's that. "SIMPLE."

But suppose you want to go back over that same data: use those questionnaires time after time, searching for different combinations of facts each time?

EXAMPLE: which chicken farmers live within city limits, have leftover eggs to sell, feed them only toxin-free feeds, and teach poultry husbandry? for free?

To do this latter research, we need files that can handle all the "bits" of data we collect about each person, mixing and matching from among literally hundreds of thousands of possible combinations.

This kind of data-processing is what computers are designed to do best. "Inverted" manual files run a close second. Manual tally-sheets or ordinary files run far behind.

Consider the APPLE data. The questionnaire alone has 21,000 possible data-points: 200 skills x 7 possible interests x 5 levels of competence x 3 ways of compensating.

If APPLE has 1,000 clients, that makes 21,000,000 data-points! (In our punch-card version, we've reduced the questionnaire to 200 skills x 2 kinds of interest x 2 levels of competence x 3 kinds of compensation = 2,400 data points x 1,000 clients = 2,400,000 data points!

All of this kind of consideration usually is left to system designers - "computer people" — but we feel "ordinary" types who try to help people with skills exchanges, switchboards, etc., ought to consider it, too.

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Since you have a manual option, as well as an electronic one — HAPPY CONSIDERING!